REMARKS

Claims 1-30 remain pending in this application. Additionally, new claims 31-38 have been added. Therefore, claims 1-38 are pending in the present application.

The Examiner rejected claims 1-3, 7, 8, 11, 12, 15, 16, 20-22, 26, 27, and 30 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,486,675 (*Coronel*). Applicants respectfully traverse this rejection.

In the Final Office Action dated November 30, 2004, the Examiner indicated that Applicants had focused on portions of the prior art references that were not cited as teaching the claim limitations and stating that these teachings were relied upon. Applicants respectfully disagree. Applicants cited various portions of the cited prior art to illustrate that the analysis performed by the Examiner to read upon various elements of the present invention were incorrect based upon the prior art. Applicants have thoroughly analyzed the portions of the prior art cited by the Examiner, as well as other portions of the prior art, and have argued that the cited prior art does not anticipate or make obvious all the elements of the claims of the present invention.

In the Final Office Action dated November 30, 2004, in the "Response to the Arguments section, the Examiner indicated that various measurements in the monitoring of process parameters in real time are taught by *Coronel*, and the results of these measurements in the monitoring operations are stored in databases. See page 10 of the Final Office Action dated November 30, 2004. However, Applicants respectfully assert that the teachings of *Coronel* do not teach or make obvious all the claims of the present invention. Although *Coronel* discloses a

database, it simply does not disclose the steps called for by claim 1 of the present invention. Claim 1 calls for acquiring data on a real time basis and storing the data in a database. Further, claim 1 refers to data stored in the database and to performing a fault detection based upon a trigger signal. The Examiner cited various passages, such as column 16, lines 9-16, to read upon elements of claim 1; however, these citations do not anticipate or make obvious these elements. For example, the Examiner cites that when step C is completed, the step report and the alarm report are stored so that the wafer history of this wafer is complete for a particular process. However, it is clear that any measurements are stored upon completion of a process step C. *See,* col. 16, lines 9-16. There is no disclosure of a triggering signal in *Coronel* that would cause data to be extracted from a database in a substantially real time basis, unlike the claims of the present invention.

The real time analysis described by *Coronel* is basically performed by selecting adequate algorithms in the database to monitor a process parameter evolution. *See,* block 52 of the flow chart in Figure 15. *Coronel* does not disclose providing a trigger signal that causes data to be extracted from the database in a substantially real time basis. The citation in *Coronel* at column 16, lines 9-16, which the Examiner uses to assert that a trigger signal causes data to be extracted from the database in a substantially real time basis, is an assertion that is not supported by the disclosure or by the Examiner's arguments. As described above, this portion of *Coronel* merely discloses that when step C is completed, the step report and the alarm report are stored so that history of the wafer is now complete for the step process. *See,* column 16, lines 9-12. The flagging of the alarm in *Coronel* merely relates to identifying a wafer; however, there is no disclosure or suggestion in *Coronel* regarding a trigger signal that causes the performance of

fault detection analysis based on data stored in a database. Simply because the Examiner cites that *Coronel* stores measurements in the database, it does not follow that *Coronel* discloses a trigger signal to cause a fault detection analysis based on data extracted from the database near a real time basis. *Coronel* simply does not provide subject matter that discloses a trigger signal to extract data from a database in real time to perform fault detection analysis. Therefore, all of the elements the claims of the present invention are not anticipated or made obvious by *Coronel*.

Coronel discloses a database that contains an evolution of a process parameter in normal operating conditions and in all identified deviations of the process. It also contains the history of the wafer. *Coronel* discloses a rule that is defined by process engineers, such as thirty seconds after step A started, check signal S1 amplitude and if the variation between two samples is greater than 5%, then the alert code of "IMMEDIATELY STEP STOP" would be flagged. *See*, column 13, lines 12-18. *Coronel* discloses that a construction of an alarm component of a database is provided. This refers to an alert code and a recommended action to be taken that are assigned to any identified deviation. These alarms and related data are stored in a database. *See*, column 13, lines 43-48. The Examiner utilizes this disclosure by *Coronel* to read upon the fault detection analysis being based upon data acquired from a database based upon a trigger signal. However, Applicants respectfully assert that the alert condition does not read upon the trigger signal called for by claims of the present invention. *Coronel* discloses storing the alarms into the database. *See*, column 14, lines 52-54. The alarm reports are stored into the database 46 in a file referred to as "wafer history." In contrast to *Coronel*, claim 1 of the present invention, which calls for performing a fault detection analysis based upon a trigger signal, wherein the fault

detection analysis is based upon the data acquired from a database, which stores data on a real time or a near real time basis. These concepts are not disclosed or suggested by *Coronel*.

Coronel discloses that tests are performed *in situ* and in real time. *See*, column 14, lines 39-40. However, claim 1 calls for acquiring data on a real time basis and storing the data in a database. In contrast, *Coronel* discloses applying algorithms stored in the database to analyze the corresponding signals generated by a controller according to the analysis rule stored in the database. However, *Coronel* does not disclose a trigger signal that causes the performance of a fault detection analysis based upon data stored in the database. In fact, *Coronel* is directed to storing algorithms in databases and analyzing signals generated by the controller according to the analysis rules stored in the database. Claim 1 refers to data stored in the database and performing a fault detection based upon a trigger signal. The alert code of "IMMEDIATE STEP STOP," for example, disclosed in column 13, lines 13-18 of *Coronel*, does not read upon the trigger signal. In fact, it is quite the opposite in this portion of *Coronel*, which calls for performing an analysis of samples and determining whether there are variations between certain percentages to generate an alert code of "IMMEDIATE STEP STOP," which the Examiner relies upon to read upon portions of the claim. However, in contrast to *Coronel*, claim 1 of the present invention calls for a trigger signal that causes the performance of a fault detection analysis based upon the data in the database. In contrast to claim 1, *Coronel* discloses storing alert code and alarm report data into a database. Therefore, *Coronel* simply does not disclose all of the elements of claim 1 of the present invention.

Similarly, claim 12 provides for various methods that include acquiring various process data and storing it into a database and performing a fault detection based upon the data in the database based upon a trigger signal, which is also not disclosed, taught, or suggested by *Coronel* for at least the reasons described above. Furthermore, claims 15, 16, and 20, call for various apparatus and systems for performing a fault detection analysis based upon a trigger signal wherein the fault detection analysis is based upon data that is acquired on real time or a near real time and stored into a database, which are elements that are not disclosed, taught, or suggested by *Coronel* for at least the reasons described above.

Independent claims 1, 12, 15, 16, and 20, are allowable for at least the reasons cited above. Additionally, dependent claims 2-11, 13-14, 17-19, 21-30, which depend from independent claims 1, 12, 16, and 20, respectively, are also allowable for at least the reasons cited above. Accordingly, claims 1, 2, 3, 7, 8, 11, 12, 15, 16, 20, 21, 22, 26, 27, and 30, which were rejected under *Coronel* are allowable.

Additionally, newly added independent claims 31 and 37 are allowable for at least the reasons cited above. Claims 31 and 37 also comprise the subject matter of offline metrology data, which is subject matter that is allowable, as indicated by the Examiner regarding claim 4. Therefore, for this additional reason, independent claims 31 and 37 are allowable. Additionally, dependent claims 32-36 and 38, which respectively depend from independent claims 31 and 37, are also allowable for at least the reasons cited above.

Reconsideration of the present application is respectfully requested.

Applicants acknowledge and appreciate that claim 4-6, 9, 10, 13, 14, 17-19, 23-25, 28, and 29 were objected to by the Examiner as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Independent claims 1, 12, 15, 16, 20, 31, and 37 are allowable for at least the reasons cited above. Additionally, dependent claims claims 2-11, 13-14, 17-19, 21-30, 32-36, and 37, which depend from independent claims 1, 12, 16, 20, 31 and 37, respectively, are also allowable for at least the reasons cited above.

Reconsideration of the present application is respectfully requested.

In light of the arguments presented above, Applicants respectfully assert that claims 1-30 are allowable. In light of the arguments presented above, a Notice of Allowance is respectfully solicited.

If for any reason the Examiner finds the application other than in condition for allowance, **the Examiner is requested to call the undersigned attorney** at the Houston, Texas telephone number (713) 934-4069 to discuss the steps necessary for placing the application in condition for allowance.

Respectfully submitted,

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IN THE DRAWINGS

Applicants acknowledge that the Examiner has accepted the drawings filed on January 11, 2002.